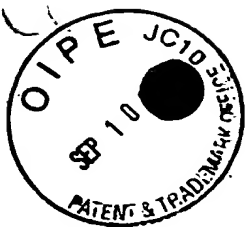


PF-0687 USN



<110> LAL, Preeti
YUE, Henry
TANG, Y. Tom
HILLMAN, Jennifer L.
BAUGHN, Mariah R.
YANG, Junming

<120> Carbohydrate-Modifying Enzyme

<130> PF-0687 USN

<140> 09/980,729

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<151> 2000-04-20

<150> 60/130,383

<151> 1999-04-21

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<211> 434

<212> PRT

<213> Homo sapiens

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Arg	Gly	Arg	Pro	Ser	Arg	Gly	Arg	Pro	Pro	Lys	Leu	Gln	Arg	Asn
				20					25					30
Ser	Arg	Gly	Gly	Gln	Gly	Arg	Gly	Val	Glu	Lys	Pro	Pro	His	Leu
				35					40					45
Ala	Ala	Leu	Ile	Leu	Ala	Arg	Gly	Gly	Ser	Lys	Gly	Ile	Pro	Leu
				50					55					60
Lys	Asn	Ile	Lys	His	Leu	Ala	Gly	Val	Pro	Leu	Ile	Gly	Trp	Val
				65					70					75
Leu	Arg	Ala	Ala	Leu	Asp	Ser	Gly	Ala	Phe	Gln	Ser	Val	Trp	Val
				80					85					90
Ser	Thr	Asp	His	Asp	Glu	Ile	Glu	Asn	Val	Ala	Lys	Gln	Phe	Gly
				95					100					105
Ala	Gln	Val	His	Arg	Arg	Ser	Ser	Glu	Val	Ser	Lys	Asp	Ser	Ser
				110					115					120
Thr	Ser	Leu	Asp	Ala	Ile	Ile	Glu	Phe	Leu	Asn	Tyr	His	Asn	Glu
				125					130					135
Val	Asp	Ile	Val	Gly	Asn	Ile	Gln	Ala	Thr	Ser	Pro	Cys	Leu	His

PF-0687 USN

Pro Thr Asp Leu	Gln Lys Val Ala Glu	Met Ile Arg Glu Glu Gly	140	145	150
Tyr Asp Ser Val	Phe Ser Val Val Arg	Arg His Gln Phe Arg Trp	155	160	165
Ser Glu Ile Gln	Lys Gly Val Arg Glu	Val Thr Glu Pro Leu Asn	170	175	180
Leu Asn Pro Ala	Lys Arg Pro Arg Arg	Gln Asp Trp Asp Gly Glu	185	190	195
Leu Tyr Glu Asn	Gly Ser Phe Tyr Phe	Ala Lys Arg His Leu Ile	200	205	210
Glu Met Gly Tyr	Leu Gln Gly Gly Lys	Met Ala Tyr Tyr Glu Met	215	220	225
Arg Ala Glu His	Ser Val Asp Ile Asp	Val Asp Ile Asp Trp Pro	230	235	240
Ile Ala Glu Gln	Arg Val Leu Arg Tyr	Gly Tyr Phe Gly Lys Glu	245	250	255
Lys Leu Lys Glu	Ile Lys Leu Leu Val	Cys Asn Ile Asp Gly Cys	260	265	270
Leu Thr Asn Gly	His Ile Tyr Val Ser	Gly Asp Gln Lys Glu Ile	275	280	285
Ile Ser Tyr Asp	Val Lys Asp Ala Ile	Gly Ile Ser Leu Leu Lys	290	295	300
Lys Ser Gly Ile	Glu Val Arg Leu Ile	Ser Glu Arg Ala Cys Ser	305	310	315
Lys Gln Thr Leu	Ser Ser Leu Lys Leu	Asp Cys Lys Met Glu Val	320	325	330
Ser Val Ser Asp	Lys Leu Ala Val Val	Asp Glu Trp Arg Lys Glu	335	340	345
Met Gly Leu Cys	Trp Lys Glu Val Ala	Tyr Leu Gly Asn Glu Val	350	355	360
Ser Asp Glu Glu	Cys Leu Lys Arg Val	Gly Leu Ser Gly Ala Pro	365	370	375
Ala Asp Ala Cys	Ser Thr Ala Gln Lys	Ala Val Gly Tyr Ile Cys	380	385	390
Lys Cys Asn Gly	Gly Arg Gly Ala Ile	Arg Glu Phe Ala Glu His	395	400	405
Ile Cys Leu Leu	Met Glu Lys Val Asn	Asn Ser Cys Gln Lys	410	415	420
	425	430			

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<211> 302

<212> PRT

<213> Homo sapiens

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PF-0687 USN

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Pro Leu Cys Leu Ala Thr Cys Leu Asp His His Phe Pro Thr Gly
35 40 45
Ser Arg Pro Thr Val Pro Gly Pro Leu His Phe Ser Gly Tyr Ser
50 55 60
Ser Val Pro Asp Gly Lys Pro Leu Val Arg Glu Pro Cys Arg Ser
65 70 75
Cys Ala Val Val Ser Ser Ser Gly Gln Met Leu Gly Ser Gly Leu
80 85 90
Gly Ala Glu Ile Asp Ser Ala Glu Cys Val Phe Arg Met Asn Gln
95 100 105
Ala Pro Thr Val Gly Phe Glu Ala Asp Val Gly Gln Arg Ser Thr
110 115 120
Leu Arg Val Val Ser His Thr Ser Val Pro Leu Leu Leu Arg Asn
125 130 135
Tyr Ser His Tyr Phe Gln Lys Ala Arg Asp Thr Leu Tyr Met Val
140 145 150
Trp Gly Gln Gly Arg His Met Asp Arg Val Leu Gly Gly Arg Thr
155 160 165
Tyr Arg Thr Leu Leu Gln Leu Thr Arg Met Tyr Pro Gly Leu Gln
170 175 180
Val Tyr Thr Phe Thr Glu Arg Met Met Ala Tyr Cys Asp Gln Ile
185 190 195
Phe Gln Asp Glu Thr Gly Lys Asn Arg Arg Gln Ser Gly Ser Phe
200 205 210
Leu Ser Thr Gly Trp Phe Thr Met Ile Leu Ala Leu Glu Leu Cys
215 220 225
Glu Glu Ile Val Val Tyr Gly Met Val Ser Asp Ser Tyr Cys Arg
230 235 240
Glu Lys Ser His Pro Ser Val Pro Tyr His Tyr Phe Glu Lys Gly
245 250 255
Arg Leu Asp Glu Cys Gln Met Tyr Leu Ala His Glu Gln Ala Pro
260 265 270
Arg Ser Ala His Arg Phe Ile Thr Glu Lys Ala Val Phe Ser Arg
275 280 285
Trp Ala Lys Lys Arg Pro Ile Val Phe Ala His Pro Ser Trp Arg
290 295 300
Thr Glu

<210> 3

<211> 578

<212> PRT

<213> Homo sapiens

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Asp Pro Ala His	Tyr Arg Glu Arg Val	Lys Ala Met Phe Tyr	His
35	40	45	
Ala Tyr Asp Ser	Tyr Leu Glu Asn Ala	Phe Pro Phe Asp Glu	Leu
50	55	60	
Arg Pro Leu Thr	Cys Asp Gly His Asp	Thr Trp Gly Ser Phe	Ser
65	70	75	
Leu Thr Leu Ile	Asp Ala Leu Asp Thr	Leu Leu Ile Leu Gly	Asn
80	85	90	
Val Ser Glu Phe	Gln Arg Val Val Glu	Val Leu Gln Asp Ser	Val
95	100	105	
Asp Phe Asp Ile	Asp Val Asn Ala Ser	Val Phe Glu Thr Asn	Ile
110	115	120	
Arg Val Val Gly	Gly Leu Leu Ser Ala	His Leu Leu Ser Lys	Lys
125	130	135	
Ala Gly Val Glu	Val Glu Ala Gly Trp	Pro Cys Ser Gly Pro	Leu
140	145	150	
Leu Arg Met Ala	Glu Glu Ala Ala Arg	Lys Leu Leu Pro Ala	Phe
155	160	165	
Gln Thr Pro Thr	Gly Met Pro Tyr Gly	Thr Val Asn Leu Leu	His
170	175	180	
Gly Val Asn Pro	Gly Glu Thr Pro Val	Thr Cys Thr Ala Gly	Ile
185	190	195	
Gly Thr Phe Ile	Val Glu Phe Ala Thr	Leu Ser Ser Leu Thr	Gly
200	205	210	
Asp Pro Val Phe	Glu Asp Val Ala Arg	Val Ala Leu Met Arg	Leu
215	220	225	
Trp Glu Ser Arg	Ser Asp Ile Gly Leu	Val Gly Asn His Ile	Asp
230	235	240	
Val Leu Thr Gly	Lys Trp Val Ala Gln	Asp Ala Gly Ile Gly	Ala
245	250	255	
Gly Val Asp Ser	Tyr Phe Glu Tyr Leu	Val Lys Gly Ala Ile	Leu
260	265	270	
Leu Gln Asp Lys	Lys Leu Met Ala Met	Phe Leu Glu Tyr Asn	Lys
275	280	285	
Ala Ile Arg Asn	Tyr Thr Arg Phe Asp	Asp Trp Tyr Leu Trp	Val
290	295	300	
Gln Met Tyr Lys	Gly Thr Val Ser Met	Pro Val Phe Gln Ser	Leu
305	310	315	
Glu Ala Tyr Trp	Pro Gly Leu Gln Ser	Leu Ile Gly Asp Ile	Asp
320	325	330	
Asn Ala Met Arg	Thr Phe Leu Asn Tyr	Tyr Thr Val Trp Lys	Gln
335	340	345	
Phe Gly Gly Leu	Pro Glu Phe Tyr Asn	Ile Pro Gln Gly Tyr	Thr
350	355	360	
Val Glu Lys Arg	Glu Gly Tyr Pro Leu	Arg Pro Glu Leu Ile	Glu
365	370	375	
Ser Ala Met Tyr	Leu Tyr Arg Ala Thr	Gly Asp Pro Thr Leu	Leu
380	385	390	
Glu Leu Gly Arg	Asp Ala Val Glu Ser	Ile Glu Lys Ile Ser	Lys

	395		400		405
Val Glu Cys Gly	Phe Ala Thr Ile Lys Asp	Leu Arg Asp His Lys			
	410		415		420
Leu Asp Asn Arg	Met Glu Ser Phe Phe	Leu Ala Glu Thr Val Lys			
	425		430		435
Tyr Leu Tyr Leu	Leu Phe Asp Pro Thr	Asn Phe Ile His Asn Asn			
	440		445		450
Gly Ser Thr Phe	Asp Thr Val Ile Thr	Pro Tyr Gly Glu Cys Ile			
	455		460		465
Leu Gly Ala Gly	Gly Tyr Ile Phe Asn	Thr Glu Ala His Pro Ile			
	470		475		480
Asp Pro Ala Ala	Leu His Cys Cys Gln	Arg Leu Lys Glu Glu Gln			
	485		490		495
Trp Glu Val Glu	Asp Leu Met Arg Glu	Phe Tyr Ser Leu Lys Arg			
	500		505		510
Ser Arg Ser Lys	Phe Gln Lys Asn Thr	Val Ser Ser Gly Pro Trp			
	515		520		525
Glu Pro Pro Ala	Arg Pro Gly Thr Leu	Phe Ser Pro Glu Asn His			
	530		535		540
Asp Gln Ala Arg	Glu Arg Lys Pro Ala	Lys Gln Lys Val Pro Leu			
	545		550		555
Leu Ser Cys Pro	Ser Gln Pro Phe Thr	Ser Lys Leu Ala Leu Leu			
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Gly Gln Val Phe	Leu Asp Ser Ser				
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<211> 461

<212> PRT

<213> Homo sapiens

<220>

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<223> Incyte ID No: 2618358CD1

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Gly Gly Glu Arg Val	Phe Lys Asn Gln Thr	Gly Asp Val Ala Cys
	35	40 45
Gly Ser Tyr Thr	Leu Trp Glu Glu Asp	Leu Lys Cys Ile Lys Gln
	50	55 60
Leu Gly Leu Thr His	Tyr Arg Phe Ser	Leu Ser Trp Ser Arg Leu
	65	70 75
Leu Pro Asp Gly Thr	Thr Gly Phe Ile	Asn Gln Lys Gly Ile Asp
	80	85 90
Tyr Tyr Asn Lys Ile	Ile Asp Asp Leu	Leu Lys Asn Gly Val Thr
	95	100 105
Pro Ile Val Thr	Leu Tyr His Phe Asp	Leu Pro Gln Thr Leu Glu
	110	115 120

PF-0687 USN

Asp	Gln	Gly	Gly	Trp	Leu	Ser	Glu	Ala	Ile	Ile	Glu	Ser	Phe	Asp	
				125					130					135	
Lys	Tyr	Ala	Gln	Phe	Cys	Phe	Ser	Thr	Phe	Gly	Asp	Arg	Val	Lys	
				140					145					150	
Gln	Trp	Ile	Thr	Ile	Asn	Glu	Ala	Asn	Val	Leu	Ser	Val	Met	Ser	
				155					160					165	
Tyr	Asp	Leu	Gly	Met	Phe	Pro	Pro	Gly	Ile	Pro	His	Phe	Gly	Thr	
				170					175					180	
Gly	Gly	Tyr	Gln	Ala	Ala	His	Asn	Leu	Ile	Lys	Ala	His	Ala	Arg	
				185					190					195	
Ser	Trp	His	Ser	Tyr	Asp	Ser	Leu	Phe	Arg	Lys	Lys	Gln	Lys	Gly	
				200					205					210	
Met	Val	Ser	Leu	Ser	Leu	Phe	Ala	Val	Trp	Leu	Glu	Pro	Ala	Asp	
				215					220					225	
Pro	Asn	Ser	Val	Ser	Asp	Gln	Glu	Ala	Ala	Lys	Arg	Ala	Ile	Thr	
				230					235					240	
Phe	His	Leu	Asp	Leu	Phe	Ala	Lys	Pro	Ile	Phe	Ile	Asp	Gly	Asp	
				245					250					255	
Tyr	Pro	Glu	Val	Val	Lys	Ser	Gln	Ile	Ala	Ser	Met	Ser	Gln	Lys	
				260					265					270	
Gln	Gly	Tyr	Pro	Ser	Ser	Arg	Leu	Pro	Glu	Phe	Thr	Glu	Glu	Glu	
				275					280					285	
Lys	Lys	Met	Ile	Lys	Gly	Thr	Ala	Asp	Phe	Phe	Ala	Val	Gln	Tyr	
				290					295					300	
Tyr	Thr	Thr	Arg	Leu	Ile	Lys	Tyr	Gln	Glu	Asn	Lys	Lys	Gly	Glu	
				305					310					315	
Leu	Gly	Ile	Leu	Gln	Asp	Ala	Glu	Ile	Glu	Phe	Phe	Pro	Asp	Pro	
				320					325					330	
Ser	Trp	Lys	Asn	Val	Asp	Trp	Ile	Tyr	Val	Val	Pro	Trp	Gly	Val	
				335					340					345	
Cys	Lys	Leu	Leu	Lys	Tyr	Ile	Lys	Asp	Thr	Tyr	Asn	Asn	Pro	Val	
				350					355					360	
Ile	Tyr	Ile	Thr	Glu	Asn	Gly	Phe	Pro	Gln	Ser	Asp	Pro	Ala	Pro	
				365					370					375	
Leu	Asp	Asp	Thr	Gln	Arg	Trp	Glu	Tyr	Phe	Arg	Gln	Thr	Phe	Gln	
				380					385					390	
Glu	Leu	Phe	Lys	Ala	Ile	Gln	Leu	Asp	Lys	Val	Asn	Leu	Gln	Val	
				395					400					405	
Tyr	Cys	Ala	Trp	Ser	Leu	Leu	Asp	Asn	Phe	Glu	Trp	Asn	Gln	Gly	
				410					415					420	
Tyr	Ser	Ser	Arg	Phe	Gly	Leu	Phe	His	Val	Asp	Phe	Glu	Asp	Pro	
				425					430					435	
Ala	Arg	Pro	Arg	Val	Pro	Tyr	Thr	Ser	Ala	Lys	Glu	Tyr	Ala	Lys	
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Ile	Ile	Arg	Asn	Asn	Gly	Leu	Glu	Ala	His	Leu					
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<210> 5

<211> 529

<212> PRT

<213> Homo sapiens

7/12

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380	385	390
Val Gly Val Pro Ile Phe Gly Asp Gln Leu	Asp Asn Ile Ala His	
395	400	405
Met Lys Ala Lys Gly Ala Ala Val Glu Ile	Asn Phe Lys Thr Met	
410	415	420
Thr Ser Glu Asp Leu Leu Arg Ala Leu Arg	Thr Val Ile Thr Asp	
425	430	435
Ser Ser Tyr Lys Glu Asn Ala Met Arg Leu	Ser Arg Ile His His	
440	445	450
Asp Gln Pro Val Lys Pro Leu Asp Arg Ala	Val Phe Trp Ile Glu	
455	460	465
Phe Val Met Arg His Lys Gly Ala Lys His	Leu Arg Ser Ala Ala	
470	475	480
His Asp Leu Thr Trp Phe Gln His Tyr Ser	Ile Asp Val Ile Gly	
485	490	495
Phe Leu Leu Thr Cys Val Ala Thr Ala Ile	Phe Leu Phe Thr Lys	
500	505	510
Cys Phe Leu Phe Ser Cys Gln Lys Phe Asn	Lys Thr Arg Lys Ile	
515	520	525
Glu Lys Arg Glu		

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<212> DNA

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ggccgccacc	tccgtctcca	acccgcgggg	gcgaccgtcc	cggggccggc	cgccgaagct	180
gcagcgcaac	tctcgcgggc	gccagggccg	aggtgtggag	aagccccgcg	acctggcagc	240
cctaattctg	gcccggggag	gcagcaaagg	catccccctg	aagaacatta	agcacctggc	300
gggggtcccc	ctcattggct	gggtcctgcy	tgcgcccttg	gattcagggg	ccttccagag	360
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tcgtgaagtg	accgaacctc	tgaatttaaa	tccagctaaa	cggcctcgtc	gacaagactg	720
ggatggagaa	ttatatgaaa	atggctcatt	ttattttgct	aaaagacatt	tgatagagat	780
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tatagatgtg	gatattgatt	ggcctattgc	agagcaaaga	gtattaagat	atggctatgt	900
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<210> 7
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 <223> a, t, c, g, or other

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PF-0687 USN

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<210> 8
<211> 1889
<212> DNA
<213> Homo sapiens

<220>
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